Space Weather Forecast

Issued on Tuesday 4 March 2025 at 01:21 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of Moderate flares (Minor-Moderate radio blackouts) throughout. Chance of Minor/Moderate geomagnetic storm (G1/G2) late Day 1 into Day 2.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity is Low, with a peak low-ranking Common class X-ray flare at 03/1647UTC from a sunspot region in the southeast.

The facing side of the Sun displays eight sunspot regions, with two regions unnumbered. A couple of these have shown some increase in complexity in the past UTC day, albeit to no notable result in flare activity thus far.

No Earth-directed Coronal Mass Ejections (CMEs) were identified in available satellite imagery in the period.

Solar Wind / Geomagnetic Activity: Solar winds are indicative of a continuing waning connection to a strong 'coronal hole' fast wind.

Solar winds have been on a slight declining trend, from elevated to end the 24 hours at slightly elevated levels. The number of particles comprising the solar wind and their associated magnetic field were both small-scale and unremarkable.

The net result of the above solar wind measures was quiet geomagnetic activity.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity carries a daily chance of becoming Moderate, with isolated Moderate-class X-ray flares. This may rise slightly into the start of the new UTC week as some sunspot regions potentially return over the eastern solar horizon.

Solar Wind / Geomagnetic Activity: A CME from the 01/1730UTC 'filament eruption' (arc of plasma) from the southeast of the Sun may affect Earth as a glancing blow later on Day 1, around 04/1900UTC. This is the only CME in the forecast.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.

Otherwise, fast wind influence from a coronal hole is expected to continue to wane, with slightly elevated solar winds declining towards background prior to any CME arrival. This is the only coronal hole in the forecast.

Geomagnetic activity is expected to be quiet until late on Day 1 Tuesday 04 March, whereupon the aforementioned CME brings a chance of minor geomagnetic storm to end the UTC day and on into Day 2 (5 March). Activity should lessen once again later in the UTC working week.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	30	40	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	30	40	40	40
Very Active	R3-R5 (X Class)	No	1	1	1	1

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	**≥ S1**	No	5	5	10	10
Very Active	**≥ S3 ***	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.